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**PUBLICATIONS ON AEROSPACE MEDICINE
OF
DR. H.J. VON BECKH (1941 - 1987)**

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NAVAL AIR DEVELOPMENT CENTER
Warminster, PA 18974-5000**

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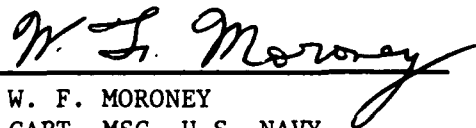
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I. IN ENGLISH

A. *Journals and Proceedings*

- I-A-1 Experiments with animals and human subjects under sub and zero gravity conditions during the dive and parabolic flight. *J. Aviation Medicine*, 25:235-241, 1954. Abstract also published (in Italian) in *Rivista di Medicina Aeronautica*, 18:520-21, Rome, Italy, 1955 and in *J. British Interplanetary Society*, 14:57 (#15), 1955. A similar paper has been previously presented at the 4th International Astronautical Congress, Zurich, Switzerland, Aug. 3-8, 1953. See entry III-A-1.
- I-A-2 Gravity changes in aircraft and ships. *J. British Interplanetary Society*, 15:73-81, 1956.
- I-A-3-a Multi-directional G-protection in flight and during escape. Proceedings, 2nd European Congress of Aviation Medicine, Stockholm Sep 16-19, 1957. Abstract published in *Meddelanden fran Flyg - och Navalmedicinska Naemnden* (Communications from the Swedish State Research Committee on Aviation and Naval Medicine), P. 7, Congress Number Stockholm, Sep 1957.
- I-A-3-b Multi-directional G-protection in space flight and during escape. A theoretical approach. *J. Aviation Medicine*, 29:335-342, 1958.
- I-A-4-a Multi-directional G-protection in space vehicles. Proceedings, 8th International Astronautical Congress, Barcelona, Oct 6-12, 1957, P. 37-46, Publisher Springer Verlag, Vienna, 1958
- I-A-4-b Multi-directional G-protection in space vehicles. (Abbreviated version of I-A-4a). *J. British Interplanetary Society*, 16:525-533, 1958.
- I-A-5 Centrifuge experiments on high G-loads in mice and their possible alleviation by multi-directional anti-G devices. (Co-author G. J. D. Schock). Proceedings, 29th Annual Meeting of the Aeromedical Association, Washington, D.C., Mar 24-26, 1958. Abstract published in *J. Aviation Medicine*, 29:229, 1958. See also entry I-B-1.
- I-A-6-a Physiology of launching and re-entry stress in rodents. Symposium on Possible Uses of Earth Satellites in Life Science Experiments. National Academy of Sciences - National Research Council, Washington 25, D. C., May 14-17, 1958. Proceedings edited by O. H. Schmitt, Michigan Press, 1959. Also Published: See entry I-B-2.
- I-A-6-b Problems of accelerations, weightlessness, and temperature in space logistics. Space Logistics Panel, Fourth Annual Joint Military-Industry Packaging and Materials Handling Symposium, The Department of the Navy, Office of Navy Materiel, 30 Sep 1958, The Departmental Auditorium, Washington, D. C.
- I-A-7 Weightlessness and space flight. *Astronautics*, 4:2:26-27, 84-86, 1959. Abstract also published: *Aerospace Medicine*, 30:456 (#97), 1959.
- I-A-8-a Flight experiments about human reactions to accelerations which are followed or preceded by weightlessness. Proceedings, 9th International Astronautical Congress, Amsterdam, Aug 25-30, 1958, p. 507-525, Publisher Springer Verlag, Vienna, 1959. Abstract also published in *J. British Interplanetary Society*, 17:66 (#166), 1959 and in *Aerospace Medicine*, 31:437(#241), 1960.

- I-A-8-b Human reactions during flight to acceleration preceded by or followed by weightlessness. (Abbreviated version of I-A-8-a). *Aerospace Medicine*. 30:391-409, 1959. Abstract also published in *J. British Interplanetary Society*, 17:341(#1950), 1960.
- I-A-9 Space flight hazards caused by weightlessness. Proceedings, 30th Annual Meeting of the Aeromedical Association. Los Angeles. April 27-29, 1959. Abstract published in *J. Aviation Medicine*. 30:208, 1959, and in *J. British Interplanetary Society*, 17:340(#1924), 1960.
- I-A-9-a Pathology of visceral displacement in animal subjects exposed to abrupt deceleration. (With J.E. Cook and J.D. Mosely). Proceedings, 30th Annual Meeting of the Aeromedical Association. Los Angeles. April 27-29, 1959. Abstract published in *J. Aviation Medicine*, 30:180, 1959.
- I-A-10 Multi-directional G-protection during experimental sled runs. Proceedings, 10th International Astronautical Congress. Longon. Aug 20-Sep 5, 1959. P. 671-682. Publisher Springer Verlag, Vienna, 1960. Abstract also published in *J. British Interplanetary Society*, 17:178(#989), 1959.
- I-A-11 Physiological reactions of humans and animals to the weightless state. Proceedings, 21st International Congress of Physiological Sciences. Buenos Aires. Aug 9-15, 1959. p. 31-32. Buenos Aires, 1959.
- I-A-12 A summary of motion sickness experiences in weightless flights conducted by the Aeromedical Field Laboratory. Symposium on Weightlessness and Motion Sickness. Wright-Patterson AFB, March 29-30, 1960. Proceedings edited by F. W. Banghart, University of Virginia, Charlottesville, Virginia. See also entry I-B-5.
- I-A-13 Weightlessness. Current status of experimentation with humans and animals. Proceedings, 35th Anniversary Congress of the Pan American Medical Association, Mexico City, May 2-11, 1960 p. 74-75.
- I-A-14 The incidence of motion sickness during exposures to the weightless state. Proceedings, Symposium of Space Medicine, 11th International Astronautical Congress, Stockholm, Aug 15-20, 1960. Also published: *J. Astronautik*, 2:4:217-224, Stockholm, 1961. Abstract also published in *Aerospace Medicine*, 33:1166(#689), 1962.
- I-A-15 Survey of recent contributions to the psycho-physiology of weightlessness. Proceedings, 3rd International Symposium on Rockets and Astronautics, Tokyo, Japan, Aug 28 - Sep 1, 1961, Chapter II, Space Medicine and Biology, p. 8. Japanese Rocket Society, Tokyo, Japan, 1961.
- I-A-16 Psycho-physiological reactions to weightlessness as observed on subjects during recent bioballistic and biosatellite experiments. Proceedings, 12th International Astronautical Congress, Washington, D.C., Oct 1-7, 1961, Vol II, p. 584-585. Academic Press Inc., New York, 1962.
- I-A-17 Aerospace medical research at Holloman Air Force Base. Proceedings, 13th International Astronautical Congress, Varna, Bulgaria, Sep 21-27, 1962.
- I-A-18 Problem areas of long duration weightlessness. Proceedings, 6th International and 12th European Congress of Aviation and Space Medicine, Rome, Italy, 1-5 Oct 1963, Vol I, p. 429-434. Air Ministry, Office of the Surgeon General, Rome, Italy, 1965. Abstract also published (in French) in *La Presse Medicale*, 72:11:615, Paris, France, 29 Feb 1964, and in *Aerospace Medicine*, 37:168(#653), 1966.

- I-A-19 Cardiovascular reactions to the weightless state. Proceedings, 8th International Congress of Internal Medicine. Buenos Aires, Argentina, 23 - 28 Nov 1964, p. 370-371.

- I-A-20 Rapid decompression of chimpanzees to a near vacuum. Proceedings, XV. Congressus Internationalis Medicinae Aviaticae et Cosmicae, Prague, Czechoslovakia, Sep 26-Oct 1, 1966. *Abstract also published* (in Russian) in *Kosmicheskoga Biologija i Medizina* (Space Biology and Medicine), 1:1:86, January/February 1967. Izdatel'stvo Medicina, Moscow, 1967. *Abstract also published* (In French) in *Revue Francaise d'Astronautique*, 2: 17-21, 1967.

- I-A-21 Decompression hazards in supersonic transports. (with S.J. Gerathewohl). Proceedings of the 6th Annual Meeting of the French-Anglo-United States Supersonic Transport Committee (F.A.U.S.S.T). Aeromedical Session, (For Official Use Only), Paris, March 1969.

- I-A-22 Decompression of unprotected non human primates in seated and in semi-supine position to simulated altitudes of 38,000 feet. (with A.G. Koestler, S.J. Gerathewohl and R.G. McIver). Proceedings, 40th Annual Scientific Meeting of the Aerospace Medical Association, San Francisco, May 5-8, 1969.

- I-A-23 Decompression emergencies in high performance aircraft. Invited lecture of the NATO-AGARD Course on Advanced Operational Aviation Medicine, held at the Institute of Aviation Medicine, Fuerstenfeldbruck, AFB, West Germany, 18 June 1969.

- I-A-24 Aft-facing aircraft seats? Bioastronautics Report, Trends Publishing Co., Wash., D.C., VIII:17:91, 1969.

- I-A-25 Forward facing versus rearward facing passenger seats during emergency descent of multi Mach/high altitude transport aircraft. *Aerospace Medicine*, 40:1215-1218, 1969. See also entry I-B-7.

- I-A-26 A chronological review of bioastronautical experiments conducted at Holloman Air Force Base (1946-1969). Proceedings, International Orbiting Laboratory and Space Science Conference, sponsored by the International Academy of Astronautics, Cloudcroft, New Mexico, Sept 28-Oct 2, 1969. Session III, Life Sciences, pp. 179-191. Air Force Missile Development Center, MDGC, Holloman AFB, NM, Oct 1969.

- I-A-27 International Orbiting Laboratory and Space Science Conference, sponsored by the International Academy of Astronautics, Cloudcroft, New Mexico, Sept 28-Oct 2, 1969/ (Coeditor of Proceedings). Air Force Missile Development Center, MDGC, Holloman AFB, NM, Oct 1969.

- I-A-28 Decompression and recompression in space rescue. Second International Space Rescue Symposium of the International Academy of Astronautics, held in conjunction with the 20th International Astronautical Congress, Mar Del Plata, Argentina, Oct 5-10, 1969. Proceedings published by The Boeing Company, Space Division, Houston, Texas, pp. 307-369, April 1971.

- I-A-29 The use of nonhuman primates in space related biological experiments. Proceedings, 20th International Astronautical Congress, Session Bioastronautics I, Mar del Plata, Argentina, Oct 5-10, 1969.

- I-A-30 Protection of crewmembers and passengers against accidental decompression in high altitude/multi-Mach transport aircraft. Proceedings, Foruth Annual Symposium on

Modern Concepts in Civil Aviation Medicine. Manned Spacecraft Center (NASA). Houston, Texas, Nov 2-5, 1969.

- I-A-31 Hypobaric exposure limits in primates (with A. G. Koestler). *United States Air Force Medical Service Digest*. XX: 12:13-14, 1969.
- I-A-32 Protection against accidental decompression by compartmentalization of spacecraft and aircraft. *Aerospace Medicine*, 41:143-153, 1970.
- I-A-33 The importance of body position for the recovery and survival in the event of airliner cabin decompression. *Minerva Aerospaziale*, 2: 48, 1970, Turin, Italy. (English summary of Entry V-A-2).
- I-A-34 The standardization of space vehicle components. A *conditio sine qua non* for successful international rescue operations. Third International Space Rescue Symposium of the International Academy of Astronautics, held in conjunction with the 21st International Astronautical Congress, Constance, West Germany, October 4-10, 1970. Proceedings published by The Boeing Company, Space Division, Houston, Texas. (pp. 193-198).
- I-A-35 The dynamic environment of supersonic transport emergency descent (with S.J. Gerathewohl). Proceedings of the 8th Meeting of the French-Anglo-United States Supersonic Transport Committee (F.A.U.S.S.T.), Session on Aviation Medicine, Paper No. 8.3.3.0.3, State Department Auditorium, Washington, D.C., January 26, 1971.
- I-A-36 The use of man-rated centrifuges for the simulation of dynamic and altered pressure environments. Proceedings of the 21st Armed Forces Flight Surgeons Meeting and 10th Annual Meeting of the German Society of Aerospace Medicine, Bad Godesberg, November 1-4, 1971.
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- I-A-38 G-protection by tilting aircraft seats, with special consideration given to pelvis and legs elevating (P.A.L.E.) seats. Proceedings of XXth International Congress of Aviation and Space Medicine, Nice, France, September 18-22, 1972. See also Entry I-B-15.
- I-A-39 A novel G-protective pelvis and legs elevating (PALE) aircrew seat. Tri-Service Review on 'research on Sustained Acceleration', U.S. Navy Program. 113th Meeting of the Joint Medical Research Conference (Chairman: Dr. Chris J.D. Zaranfonetis), Directorate of Defence Research and Engineering (DDR&E), The Pentagon, Washington, D. C., March 1, 1973. Published in Proceedings of the 113th Joint Medical Research Conference, Part 5 (25 pages), Office of the Director of Defence Research and Engineering, Washington, D. C., May 31, 1973.
- I-A-40 Simultaneous exposure of human volunteers to decompression and sustained G loads. Tri service Review on 'High ALtitude Research'. U.S. Navy Program. 115th Meeting of the Joint MEDical Research Conference (Chairman Dr. Chris J. D. Zaranfonetis), Directorate of Defence Research and Engineering (DDR&E), Air Force Systems Command, Andrews Air Force Base, Washington, D.C., April 26, 1973.
- I-A-41 Biomedical considerations for the development of a PALE (Pelvis and Legs Elevating) G-protective aircrew seat. Proceedings, 44th Annual Scientific Meeting of the Aerospace Medical Association, Las Vegas, Nevada, May 7-10, 1973. Preprint published in '1973

Annual Scientific Meeting', pp. 57-58. Aerospace Medical Association, Washington National Airport, Washington, D. C. 20001.

- I-A-42 Centrifuge simulation of accidental decompression and subsequent emergency descent of high altitude/multi Mach transport aircraft. Proceedings, 44th Annual Scientific Meeting of the Aerospace Medical Association, Los Vegas, Nevada, May 7-10, 1973. Preprint published in '1973 Annual Scientific Meeting', pp. 158-159. Aerospace Medical Association, Washington National Airport, Washington, D. C. 20001.
- I-A-43 Simultaneous exposure of human volunteers to buffeting vibrations and sustained combat type accelerations on the human centrifuge. Tri-Service Review of 'Operational Aspects of Vibrations and Related Research Facilities', U.S. Navy Program, 117th Meeting of the Joint Medical Research Conference (Chairman: Dr. Chris J. D. Zarafonitis), Directorate of Defence Research and Engineering (DDR&E), Naval Medical Research Institute, Bethesda, MD., August 2, 1973.
- I-A-44 G-protection in winged space vehicles. Proceedings, 24th International Astronautical Congress, Session on Space Medicine, Baku, USSR, October 7-13, 1973.
- I-A-45 24th LAF Congress Report (Contributing Author). *Astronautics and Aeronautics*, 11:12: 58-68, Dec 1973.
- I-A-46 (1) Human centrifuge programs for present and future aerospace medical applications. (2) The role of the human centrifuge in the aerospace medical assessment of air and space crews. (3) The increase of Human G-tolerance in the PALE (Pelvis and Legs Elevating) position as measured in human centrifuge experiments using peripheral light loss (PLL) as endpoint. Proceedings, Expert Conference on Human Acceleration Research, upon invitation of the Advisory Group for Aerospace Medical Research and Development (AGARD) of the North Atlantic Treaty Organization (NATO), Fuerstenfeldbruck Air Force Base, West Germany, June 17-22, 1974.
- I-A-47 Novel methods of acceleration protection in spacecraft. Proceedings, 23rd Annual Space Flight Congress of the Hermann Oberth Society, Salzburg, Austria, June 25-29, 1974.
- I-A-48 High G PALE seat evaluation. Chemo-physiological and psychological analysis. (with V.M. Voge) Flight Surgeons' News, P. 18, Oct 1974, BuMed 51, Department of the Navy, Washington, D. C.
- I-A-49 25th IAF Congress Report (Contributing Author). *Astronautics and Aeronautics*, 12:12: 62-69, Dec 1974.
- I-A-50 Centrifuge evaluation of the G-protective PALE (Pelvis and Legs Elevating) seat concept. (with V.M. Voge and J.S. Bowman). 46th Annual Scientific Meeting of the Aerospace Medical Association, San Francisco, April 28-May 1, 1975. Published in '1975 Annual Scientific Meeting', pp 49-50, Aerospace Medical Association, Washington National Airport, Washington, D. C. 20001.
- I-A-51 Psycho-physiological assessment of acceleration induced changes in humans positioned in conventional and in PALE seat configurations. (with V.M. Voge). 46th Annual Scientific Meeting of the Aerospace Medical Association, San Francisco, April 28-May 1, 1975. Published in '1975 Annual Scientific Meeting', pp. 51-52, Aerospace Medical Association, Washington National Airport, Washington, DC 20001.

- I-A-52 Effects of combined stresses on naval air crew performance (with J.S. Bowman, and V.M. Voge). 46th Annual Scientific Meeting of the Aerospace Medical Association. San Francisco. April 28-May 1, 1975. Published in '1975 Annual Scientific Meeting. pp. 177-178. Aerospace Medical Association. Washington National Airport. Washington. DC 20001.
- I-A-53 Some lesser-known advantages of the metric system for acceleration research. *Aviation, Space, and Environmental Medicine*, 46: 849-850, 1975.
- I-A-54 Psycho-physiological and physio-chemical assessment of acceleration induced changes in humans positioned in various seatback angle configurations. (with V.M. Voge and J.S. Bowman). Advisory Group for Aerospace Research and Development (AGARD/NATO). Aerospace Medical Panel Specialists' Meeting. April 5-9, 1976. Copenhagen, Denmark. Published in 'The pathophysiology of high sustained +G_z acceleration. limitation to air combat manoeuvring and the use of centrifuges in performance training'. AGARD-CPP-189:1-8, 1976.
- I-A-55 Dynamic testing of various 15-G rated acceleration protective seat assemblies using the PALE(Pelvis And Legs Elevating) position at onset rates of 3.5 G/s. (with V.M. Voge and J.S. Bowman). 47th Annual Scientific Meeting of the Aerospace Medical Association. Bal Harbour, FL. May 10-13, 1976. Published in '1976 Annual Scientific Meeting', p. 31-32. Aerospace Medical Association. Washington National Airport. Washington. DC 20001.
- I-A-56 Acceleration induced psycho-physiological changes in various seat and PALE seat configurations. (with V.M. Voge). 47th Annual Scientific Meeting of the Aerospace Medical Association. Bal Harbour, FL. May 10-13, 1976.
- I-A-57 Development of psycho-physiological criteria for the evaluation of aviator helmet/mask systems. (with J.S. Bowman and V.M. Voge). 47th Annual Scientific Meeting of the Aerospace Medical Association. Bal Harbour, FL. May 10-13, 1976.
- I-A-58 Centrifuge experiments exposing human volunteers to inertial accelerations up to 14 G_x for durations of up to 45 seconds. (with J.S. Bowman and V.M. Voge). 19th Plenary Meeting of COSPAR (International Committee of Space Research) Session on Gravitational Biology. 5:7:9, p. 398. Philadelphia, PA June 8-19, 1976.
- I-A-59 The beginnings of aeromedical weightlessness research (with V.M. Voge and J.S. Bowman). 10th International History of Astronautics Symposium. 27th International Astronautical Congress. Anaheim, CA. Oct 10-16, 1976.
- I-A-60 Dr. von Beckh named Director of Research. Formerly Chief Scientist of the 6571st Aeromedical Research Laboratory at Holloman AFB, New Mexico, has recently accepted the position of Director of Research, Aerospace Medical research Department, at the Naval Air Development Center, Warminster, Pennsylvania. 1970. *Aerospace Med.* 41:1334
- I-A-61 Arnold D. Tuttle Award 1972. Established by United Air Lines in memory of Colonel Tuttle. Awarded for original research that has made annually the most significant contribution toward the solution of a challenging problem in Aerospace Medicine. 1972 *Aerospace Med.* 43:577-578.

- I-A-62 Harald von Beckh receives the Hubertus Strughod Award for outstanding research into the problems of Space Medicine. 1976. Aviation, Space and Enviromental Med. 47: 1015.
- I-A-63 Hermann Oberth Honor Ring for 1976 goes to H.J. von Beckh. 1976. Aviation, Space and Environmental Med., 47:102.
- I-A-64 Harald J. von Beckh receives congratulations from AIAA President F. A. Cleveland on winning the John Jeffries Medical Research Award which was given annually for significant research contribution to Aerospace Medicine in the areas of weightlessness, acceleration protection and accidental decompression named for Dr. John Jeffries of Boston, who made the first recorded scientific observations from a balloon in 1785. 1977. Aviation, Space and Environmental Med. 48: 297 and 489.
- I-A-65 Harald J. von Beckh is Space Medicine Branch President 1978. Aviation, Space and Environmental Med. 49:843-844
- I-A-66 The Executive Council of the Aerospace Medical Association in the meeting of May 10, 1978 (including D. H. J. von Beckh) 1978. Aviation, Space and Environmental Med. 49:1029.
- I-A-67 Harald J. von Beckh, M.D., President of the Space Medicine Branch, gives to John E. Pickering the Hubertus Strughold Award 1979 and the Physiology paper Award to D. Goldwater. 1979. Aviation, Space and Environmental Med. 50:870.
- I-A-68 The Space Medicine Branch of the Aerospace Medical Association. 1979. Aviation, Space and Environmental Med. 50:513-516.
- I-A-69 Physiologic and Performance Measurements in simulated airborne combined Stress Environments (with J.S. Bowman) 1979. Aviation, Space, and Environmental Med., 604-608.
- I-A-70 Harald J. von Beckh receives the Officer Cross of the Order of Merit, Federal Republic of Germany in the Washington, DC Embassy. 1980. Aviation, Space and Environmental Med., 51:95.
- I-A-71 The 30th International Astronautical Congress, 1979 in Munich, West Germany. Contains a listing of all Life Sciences papers. 1980. Aviation, Space and Environmental Med., 51:428.
- I-A-72 The 32nd International Astronautical Congress, 1981 in Roma, Italy. Contains a listing of all Life Sciences papers. 1982. Aviation, Space and Environmental Med. 53:93.
- I-A-73 The 33rd International Astronautical Congress, 1982 in Paris, France. Contains a listing of all Life Sciences papers. 1983. Aviation, Space and Environmental Med., 54:480-481.
- I-A-74 The 34th International Astronautical Congress, 1983 in Budapest, Hungary. Contains a listing of all Life Sciences Papers. 1984. Aviation, Space and Environmental Med., 55:675.
- I-A-75 History of Aeromedical Acceleration Research, 37th Annual Conference of Engineering in Medicine and Biology, Los Angeles Hilton, California. September 19, 1984.

- I-A-76 The 35th International Astronautical Congress, 1984, in Lausanne, Switzerland, 1985. Aviation, Space and Environmental Med., 56:518.
- I-A-77 The 37th International Astronautical Congress, 1986 in Innsbruck, Austria. Contains a listing of all Live Sciences Papers, 1986 Aviation, Space and Environmental Med. (in press).
- I-A-78 Former Jeffries Award Winners (including Dr. H.J. Von Beckh) were present at the 1985 ASMA meeting, 1985 Aviation, Space and Environmental Med., 56:824.
- B. *Technical Reports*
Please Note: Qualified users can order these reports from the Defence Documentation Center (DDC), Cameron Station, Alexandria, Virginia 22314.
- I-B-1 Centrifuge experiments on high G loads in mice and their possible alleviation by multidirectional and anti-G devices. Technical Note AFMDC-TN-58-10, 1958. (DDC No. AD 154104). (Co-author G. J. D. Schock). See also entry I-A-5.
- I-B-2 Physiology of launching and reentry stress in rodents. Technical Note AFMDC-TN-58-11, 1958. (DDC No. AD 154105). See also entry I-A-6a.
- I-B-3 Flight experiments about human reactions to accelerations which are followed or preceded by the weightless state. Technical Note AFMDC-TN-58-15, 1958. (DDC No. AD 154108). See also entries I-A-8-a and b.
- I-B-4 MANHIGH III. USAF manned balloon flight into the stratosphere. (Editor). Technical Report AFMDC-TR-60-16, 1961 (DDC No. AD 259635).
- I-B-5 Title classified. Section E, P. 39-45, (DDC No. AD 330266). SECRET.
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SUPPLEMENT

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- S-B *In Paraguay*
- S-B-1 Estudio de las aceleraciones durante el vuelo. (Airborne studies of accelerations). Asociación 'la Unión'. Asunción de Paraguay. 17 Nov 1953.
- S-C *In Brasil*
- S-C-1 Gravitação e subgravitação num vôo parabólico. (Gravity and subgravity in parabolic flight). Direção de Saude da Aeronautica. Ministerio da Aeronautica. (Upon invitation of the Surgeon General of the Brazilian Air Force). Rio de Janeiro. 8 Sep 1955.

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- S-F-13 Man in weightlessness. El Paso Senior Science Seminar, El Paso Education Center Auditorium, El Paso, Texas, 27 Oct 1965.
- S-F-14 Animal experiments in support of aerospace medical research. El Paso Senior Science Seminar. El Paso Education Center Auditorium, El Paso, Texas, 3 Nov 1965.
- S-F-15 The career in aerospace medicine. Trans Pecos Medical Careers Conference, Texas Western College, El Paso, Texas, 4 Mar 1966.
- S-F-16 The History of aerospace medicine. Trans Pecos Medical Careers Conference, University of Texas in El Paso (UTEP), El Paso, Texas, 3-4 Mar 1967.
- S-F-17 Two decades of aeromedical weightlessness research. IIIrd Annual Summer Conference, New Mexico Academy of Science, Alamogordo, N.M., 21-22 July 1967. *The New Mexico Academy of Science Bulletin*, 8:2:6, 1967.
- S-F-18 Highlights of scientific accomplishments of the 6571st Aeromedical Research Laboratory. Radio Station KINN, Alamogordo, N.M. 27 July 1967.
- S-F-19 The principles of Aerospace Medicine. Trans Pecos Health Careers Conference, University of El Paso (UTEP), El Paso, Texas, 1 March 1968.
- S-F-20 Exposure limits to hypobaric environments. El Paso County Medical Society, El Paso, Texas, 12 March 1968.
- S-F-21 The challenge of Aviation and Space Medicine. Keynote address of the Trans Pecos Health Careers Conference, University of Texas in El Paso (UTEP), El Paso, Texas, 7 March 1969.
- S-F-22 The practice of Aerospace Medicine. Trans Pecos Health Careers Conference, University of Texas in El Paso, (UTEP), El Paso, Texas, 6 March 1970.
- S-F-23 Basic problem areas of bio-astronautics. Invited lecture, XIth Franklin Institute Summer Astronautics Course, 13 July 1971, The Franklin Institute, Philadelphia, PA.
- S-F-24 Novel means of acceleration protection. Invited lecture, NASA-ASEE System Design Faculty Program, NASA Langley Research Center, Hampton, VA., 19 June 1972.
- S-F-25 The transition from Aviation Medicine to Space Medicine. Keynote address of the semi-annual Scientific Meeting of the Hollywood Academy of Medicine, Roosevelt Hotel, Los Angeles, CA, Nov 14, 1974.

- S-F-26 Acceleration protection by transverse positioning. Naval Reserve Research Company 4-1. The University of Princeton. NJ. April 7, 1976.
- S-G *In India*
- S-G-1 Recent advances in aerospace medicine. Upon invitation of the Ministry of Defence of India. New Delhi, India. 10 Sept 1962.
- S-G-2 Orbital flights of men and animals. Air Force School of Aviation Medicine. Indian Air Force. Bangalore, India. 13 Sep 1962.
- S-G-3 Physiological reactions to the space flight environment. Medical School, University of Mysore, India. 15 Sep 1962.
- S-H *In Austria*
- S-H-1 Neuere Beitrage zur Physiologie des menschlichen Raumfluges. (Recent contributions to the physiology of man in space). Physiologisches Institut der Universitaet Wien (Department of Physiology, Medical School, University of Vienna). Vienna, Austria. 4 Oct 1962.
- S-H-2 Medizinische Probleme der Raumfahrt (Medical problems of space flight). Upon invitation of the Ministry of Defense of Austria. School of the General Staff of the Austrian Forces. Stiftskaserne, Vienna, Austria. 5 Oct 1962.
- S-H-3 Weitere Fortschritte auf dem Gebiet der Raumfahrtmedizin. (Further advances in Aerospace Medicine). U.S. Embassy sponsored presentation for Officers of the Austrian Air Force, accompanied by the NASA 'Faith 7' film (Astronaut Gordon Cooper) and the USAF film 'Aerospace Medical Research at Holloman Air Force Base'. Office of the U.S. Air Attaché, Vienna, Austria, 11 Oct 1963.
- S-H-4 Neue Gesichtspunkte der luftfahrtmedizinischen Forschung. (New vistas in aeromedical research). Upon invitation to the Surgeon General of the Armed Forces of Austria. Auditorium of the Armed Forces Central Hospital, Vienna-Stammersdorf, Austria. 6 Oct 1966.
- S-H-5 Neuere Beitrage zur psycho-physiologie des Drucksturzes. (Recent contributions to the psycho-physiology of rapid decompression). U.S. Embassy sponsored presentation for key personnel of the Austrian Air Force, followed by the projection of NASA film MSC-65-287 'Rapid Decompression of Chimpanzees to a Near Vacuum'. Office of the U.S. Air Attaché, Vienna, Austria., 7 Oct 1966.
- S-H-6 Medizinische Ueberlegungen ueber Fluege in extremen hoechen mit ueberschallgeschwindigkeit. (Medical considerations about flights at extreme altitudes with supersonic speed). Invited lecture sponsored by the U.S. Air Attache upon invitation of the General Commanding the War College of the Austrian Forces (Verteidigungsakademie), Stiftskaserne, Vienna. 24 June 1969.
- S-H-7 Neue Methoden des Beschleunigungsschutzes. (Novel methods of acceleration protection) Invited lecture for flight surgeons and fighter pilots of the Austrian Airforce upon invitation of the Surgeon General of the Austrian Armed Forces. Verteidigungsakademie, Stiftskaserne, Vienna, Austria. June 13, 1975.

S-J *In Mexico*

S-J-1 Investigaciones recientes en el campo de la medicina espacial. (Recent Research in the field of Aerospace Medicine.) U.S. Consulate sponsored presentation to the Medical Staff and the Auxiliary Committee of the General Hospital Ciudad Juárez. U.S. Consulate. Ciudad Juárez, Chihuahua, Mexico, 22 June 1966.

S-J-2 Medicina aeroespacial. Criterios fisiológicos y psicológicos en experimentos con primates. (Aerospace Medicine. Physiological and psychological criteria in experiments with primates.) Auditorio del Instituto Mexicano del Seguro Social, Mazatlan, Sinaloa, Mexico, 27 Dec 1966.

S-J-3 Los factores hemostáticos y hemodinámicos de las aceleraciones en la aviación y el vuelo espacial. (Hemostatic and hemodynamic factors of accelerations in aviation and space flight.) U.S. Consulate sponsored presentation upon invitation of the Dean of the Medical School, University of Nuevo León, Monterrey, Nuevo León, Mexico, 13 Jan 1967.

S-J-4 Los efectos fisiológicos de las aceleraciones y desaceleraciones sobre el astronauta. (Physiological effects of accelerations and decelerations on the astronaut.) U.S. Consulate sponsored presentation upon invitation of the Dean of the Medical School, University of Yucatan, Merida, Yucatán, Mexico, 27 Jan 1967.

S-J-5 El uso de primates como predecesores del hombre en el vuelo espacial. (The use of primates as predecessors of man in space flight.) Auditorium del Hospital Ferrocarril del Pacífico, Guadalajara, Jalisco, Mexico, 3 Feb 1967.

S-K *In Australia*

S-K-1 Decompression hazards in Supersonic Transport (SST) aircraft and their possible prevention. Upon invitation of the Medical Department of Qantas Airlines, Sydney, Australia, July 16, 1973

S-L *In Chile*

The advantages of a pelvis and legs elevating Pilot seat. 30th International Congress of Aviation and Space Medicine, Santiago, Chile, 4-7 Oct 1982.

S-M *In Madeira*

The PALE (Pelvis and Legs Elevating) Pilot Seat is the solution to protect the pilot against high accelerations during flight. 32nd International Congress of Aviation and Space Medicine, Funchal, Madeira, Sept 30-Oct 5, 1984.

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